



Indian and Northern
Affairs Canada

Affaires indiennes
et du Nord Canada

An Update on Nutrition Surveys in Isolated Northern Communities

Canada

An Update on Nutrition Surveys in Isolated Northern Communities

Revised 24-hour diet recall data from the
Food Mail Nutrition Surveys (1992 and 1993) and the
Santé Québec Health Survey among the Inuit of Nunavik, 1992,
and original data from the 1997 Food Mail Nutrition Surveys

Prepared for Indian and Northern Affairs Canada by

Judith Lawn

with the collaboration of Dan Harvey,

Frederick Hill, Northern Affairs Program, Indian and Northern Affairs Canada and
Danielle Brulé, Bureau of Nutritional Sciences, Health Canada

Published under the authority of the
Minister of Indian Affairs and
Northern Development
Ottawa, 2002
www.ainc-inac.gc.ca

QS-8613-000-EE-A1
Catalogue No. R2-188/2001E
ISBN 0-662-31413-1

© Minister of Public Works and Government
Services Canada

Cette publication peut aussi être obtenue
en français sous le titre :

*Le point sur les enquêtes nutritionnelles
menées auprès des collectivités
isolées du Nord canadien*

Table of Contents

Background	1
Survey Methodologies	3
Highlights of the Results	5
Energy and macronutrients	5
Vitamins and minerals	7
Cholesterol and caffeine	9
Change in food consumption and nutrient intakes in Repulse Bay and Pond Inlet between 1992 and 1997	9
Convenience Perishable Foods	10
Body Mass Index (BMI)	11
Conclusion	15
Tables	
Appendix A. Classification of foods reported in the 24-hour recall according to food groups and Food Mail categories	A-1

Tables

Mean energy and nutrient intake

Table 1 Mean energy and macronutrient intake and percent RNI

Table 2 Percent of calories from carbohydrate, protein, total fat, saturated fat and alcohol

Table 3 Mean vitamin intake and percent RDA/RNI

Table 4 Mean intake of selected micronutrients and percent RDA/RNI

Energy and nutrients by Food Mail category

Table 5 Mean energy and nutrient intake by Food Mail category: Inuit and First Nations women 15 to 44

Table 6 Mean energy and nutrient intake by Food Mail category: Inuit of Nunavik, 1992

Major food sources of energy and selected nutrients

Table 7 Mean energy intake (Calories per day) from food groups and Food Mail categories: Inuit and First Nations women 15 to 44

Table 8 Mean energy intake (Calories per day) from food groups and Food Mail categories: Inuit of Nunavik, 1992

Table 9 Mean fat intake (grams per day) from major sources: Inuit and First Nations women 15 to 44

Table 10 Mean fat intake (grams per day) from major sources: Inuit of Nunavik, 1992

Table 11 Mean saturated fat intake (grams per day) from major sources: Inuit and First Nations women 15 to 44

Table 12 Mean saturated fat intake (grams per day) from major sources: Inuit of Nunavik, 1992

Table 13 Mean carbohydrate intake (grams per day) from major sources: Inuit and First Nations women 15 to 44

Table 14 Mean carbohydrate intake (grams per day) from major sources: Inuit of Nunavik, 1992

Table 15 Mean vitamin A intake (RE per day) from major sources: Inuit and First Nations women 15 to 44

Table 16 Mean vitamin A intake (RE per day) from major sources: Inuit of Nunavik, 1992

Table 17 Mean folate intake (mcg per day) from major sources: Inuit and First Nations women 15 to 44

Table 18 Mean folate intake (mcg per day) from major sources: Inuit of Nunavik, 1992

Table 19 Mean calcium intake (mg per day) from major sources: Inuit and First Nations women 15 to 44

Table 20 Mean calcium intake (mg per day) from major sources: Inuit of Nunavik, 1992

Table 21 Mean iron intake (mg per day) from major sources: Inuit and First Nations women 15 to 44

Table 22 Mean iron intake (mg per day) from major sources: Inuit of Nunavik, 1992

Table 23 Body Mass Index (BMI) of Inuit and First Nations women aged 15 to 44

Background

Indian and Northern Affairs Canada (INAC) is responsible for the Northern Air Stage Program, also known as the Food Mail Program. Under this program, INAC makes payments to Canada Post to subsidize the transportation of food and other goods by air to isolated northern communities. The program is designed to reduce the cost of nutritious perishable food and other essential items, thereby improving the nutrition, health and well-being of people living in isolated communities. The program provides the lowest postage rate for Nutritious Perishable Foods, but also permits non-perishable foods and certain non-food items to be shipped at higher rates. Foods of Little Nutritional Value (e.g., pop, candy, potato chips, prepared sandwiches) and high-fat Convenience Perishable Foods (e.g., fried chicken) do not qualify for the program.

To evaluate the impact of the program on food consumption, nutrition, food security and health, INAC undertook nutrition surveys of Inuit and First Nations women of childbearing age (15 to 44) in 1992 and 1993 in five communities in Nunavut (Pond Inlet, Arctic Bay, Repulse Bay, Coral Harbour and Gjoa Haven), two communities in Labrador (Nain and Davis Inlet) and one in Ontario (Fort Severn). The results of these surveys

were published in 1994.¹ The surveys were repeated in 1997 in Repulse Bay and Pond Inlet. The results of the 1997 surveys were published in 2001.²

Santé Québec also conducted health and nutrition surveys in 14 communities in Nunavik in 1992. Unlike the INAC surveys, the Santé Québec survey included both men and women aged 18 to 74. Since these communities are also eligible for the Food Mail Program, some of the results of the nutrition component of this survey were also published by INAC in 1994.³

All of these surveys included a 24-hour diet recall and a food frequency questionnaire, as well as a socio-

¹ Judith Lawn and Neima Langner, *Air Stage Subsidy Monitoring Program: Final Report, Volume 2: Food Consumption Survey* (Ottawa: Indian and Northern Affairs Canada, 1994). Selected results of these surveys were also published in Indian and Northern Affairs Canada, *Food Security in Northern Canada: A Discussion Paper on the Future of the Northern Air Stage Program* (Ottawa, 1994).

² Judith Lawn and Dan Harvey, *Change in Food Security and Nutrition in Two Inuit Communities, 1992 to 1997* (Ottawa: Indian and Northern Affairs Canada, 2001).

³ Judith Lawn and Neima Langner, *Air Stage Subsidy Monitoring Program: Final Report, Volume 3: Quebec Results* (Ottawa: Indian and Northern Affairs Canada, 1994).

demographic, health and lifestyle questionnaire. This document presents revised data from the 24-hour recalls in the 1992 and 1993 INAC surveys and from the Santé Québec Health Survey among the Inuit of Nunavik, 1992. For comparative purposes, the results of the 24-hour recalls from the 1997 surveys are also presented.

Revisions to the 1992 and 1993 data were necessary to correct a number of errors and inconsistencies discovered in the Canadian Nutrient File and Health Canada's nutrient file for country foods, in the classification of foods by food group and Food Mail category, and in the calculation of cooked weights of certain country foods. Also, it was discovered that the nutrient values for bannock had been omitted from the records for several recalls in Nunavik. Some of these errors were detected in the process of preparing a report on Northern Food Baskets⁴ and in comparing the results of the surveys conducted in Repulse Bay and Pond Inlet in 1997 with the earlier surveys in these communities.

In 1996, certain high-fat convenience products, such as frozen breaded fried chicken, were reclassified as Convenience Perishable Foods and became ineligible for the Food Mail Program. To facilitate comparison across

⁴ Judith Lawn and Frederick Hill, *Alternative Northern Food Baskets* (Ottawa: Indian and Northern Affairs Canada, 1998).

years, the 1996 Food Mail classification system was used for this analysis. Since 1992, there have also been minor changes to the eligibility or classification of certain other foods. These changes were incorporated into this revision.

In most cases, the revisions did not result in major changes in energy or nutrient intakes. Compared with the results that were published previously, however, there was a 5% increase in mean energy intake among Inuit men 45 and over in Nunavik, a 9% reduction in mean energy intake in Fort Severn and a 22% reduction in mean folate intake in Arctic Bay.

The data presented here use nutrient values for oven-roasted and boiled Canada goose and for magnesium in Arctic char that were not available for the original analysis.⁵ Use of these new values for Canada goose

⁵ Values for energy, protein, fat, carbohydrate, iron and zinc were obtained from D. L. Belinsky and H. V. Kuhnlein, "Macronutrient, mineral and fatty acid composition of Canada goose (*Branta canadensis*): an important traditional food resource of the Eastern James Bay Cree of Quebec," *Journal of Food Composition and Analysis*, Vol. 13 (2000), pp. 101-115. Saturated fat, monounsaturated fat and polyunsaturated fat were calculated for boiled Canada goose, using the proportions published for roasted Canada goose. Nutrient values for vitamins and other minerals were estimated by applying the ratio of these nutrients in domestic

accounted for the reduction in energy intake in Fort Severn. Compared with the results previously published, the mean intakes of fat and saturated fat in this community were also reduced by 27% and 24%, respectively, and the mean intakes of protein and iron increased by 18% and 50%, respectively – largely because of the new nutrient values for goose. Using these new values also affected the results for Nunavik, though much less so than in Fort Severn, where large amounts of goose were eaten during the survey period.

The major revisions to the data relate to the source of certain nutrients and the importance of country food and Nutritious Perishable Foods in the diet. Reclassification of goose from Nutritious Perishables to country food made the latter category much more important to the diet in Fort Severn than previously reported and affected the results in Nunavik as well. Reclassification of certain species of fish and shellfish into this category also increased the dietary contribution of country food in Nain and Nunavik. There were also some significant revisions

to the mean amounts of certain nutrients obtained from various food groups, as a result of correcting some inconsistencies in the classification.

Survey Methodologies

The tables in this document present mean intakes of energy and nutrients based on a single 24-hour diet recall in the INAC surveys of Aboriginal women aged 15 to 44 from six Inuit communities and two First Nations communities, and in the Santé Québec Health Survey among the Inuit of Nunavik, 1992, for four age/sex groups. Mean intakes were calculated using revised data from the Canadian Nutrient File, a special file on country foods compiled by Health Canada, and the nutrient data for Canada goose and Arctic char cited above. The percent satisfaction of recommended energy and nutrient intakes was calculated using the 1990 Recommended Nutrient Intakes⁶ (RNIs) or more recent

duck and wild duck to domestic goose. A value for magnesium in raw Arctic char was obtained from H. V. Kuhnlein, O. Receveur, H. M. Chan and E. Loring. *Assessment of Dietary Benefit/Risk in Inuit Communities* (Ste-Anne-de-Bellevue, Quebec: Centre for Indigenous Peoples' Nutrition and Environment, Macdonald Campus of McGill University, 2000), p. 197.

⁶ *Nutrition Recommendations: The Report of the Scientific Review Committee, 1990* (Ottawa: Health and Welfare Canada, 1990).

Recommended Dietary Allowances⁷ (RDAs) for the relevant age/sex groups. The data were also analysed by Food Mail category and food group. Appendix A lists foods in each category.

The sample for the INAC nutrition surveys included all Aboriginal women of childbearing age (15 to 44) living in the communities selected. The surveys were conducted in the spring, between late March and early June. Pregnant and lactating women were included. The response rate ranged from 83% in Davis Inlet to 96% in Gjoa Haven. The sample size from all three years was 1,000.

The Santé Québec Health Survey among the Inuit of Nunavik was conducted in the fall of 1992. The sampling design aimed at an error margin for all prevalences in the range of $\pm 10\%$ (coefficient of variation of less than 10% for each instrument) for the 14 localities in Nunavik. The

sample size was set at 400 households, following a systematic sampling by household address, stratified according to the 14 municipalities so that each would be represented. The sample analysed here included a total of 425 persons aged 18 to 74 who participated in a single 24-hour recall. Pregnant and lactating women were also included in this survey. The response rate was 60.5%.⁸

The Nutrition Canada graduated food models were used to estimate portion sizes. Questionnaires were translated into Inuktitut for both the INAC and Santé Québec surveys. For the INAC surveys, local women were trained to administer the 24-hour recall. Respondents could choose to have the interview conducted in English or Inuktitut. In Nunavik, nurses trained in the administration of the 24-hour recall conducted the interviews with the assistance of local translators.

⁷ Food and Nutrition Board, National Institute of Medicine, *Dietary Reference Intakes for Thiamin, Riboflavin, Niacin, Vitamin B₆, Folate, Vitamin B₁₂, Pantothenic Acid, Biotin, and Choline*, (Washington D.C.: National Academy Press, 2000); *Dietary Reference Intakes for Vitamin C, Vitamin E, Selenium, and Carotenoids* (Washington, D.C.: National Academy Press, 2000); *Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride* (Washington, D.C.: National Academy Press, 1999).

⁸ Mireille Jetté and Marcel Godbout, "Methods," in *A Health Profile of the Inuit: Report of the Santé Québec Health Survey Among the Inuit of Nunavik, 1992, Volume 1: Health Determining Factors*, ed. Mireille Jetté (Montréal: ministère de la Santé et des Services sociaux, gouvernement du Québec, 1994), pp. 17-33. The full results analysed by Santé Québec included 433 respondents.

Highlights of the Results

Energy and macronutrients

Energy

- In the 1992 and 1993 surveys, the mean energy intake of Inuit women under 45 ranged from 1869 Calories in Nunavik to 2763 Calories in Gjoa Haven, representing from 98% to 145% of the RNI.
- In Nunavik, the reported energy intake among Inuit men under 45 was only 86% of the RNI, but energy intake appeared to be adequate for older men.
- The mean energy intake in Davis Inlet was exceptionally high (178% of the RNI, compared to 110% of the RNI in Fort Severn).
- In Nunavik, men and women aged 45 to 74 obtained about a third of energy from country food, compared to 22% for younger women and 18% for younger men.
- In most of the other communities surveyed, Aboriginal women under 45 obtained from 16% to 21% of energy from country food. Pond Inlet was the exception, with just over a quarter of energy obtained from country food in 1992 and 1997.
- In most communities, Nutritious Perishable and Non-perishable Foods provided similar amounts of energy in young women's diets. The exceptions were

Repulse Bay in 1992 and Pond Inlet and Gjoa Haven in 1993, where Non-Perishables provided about twice as much energy as Nutritious Perishables.

- Non-perishable Foods also provided much more energy than Nutritious Perishables among older men and women in Nunavik.
- Foods of Little Nutritional Value (LNV) – mainly sweets, such as fruit drink crystals without vitamin C and soft drinks, and potato chips – provided from 16% to 26% of energy among Inuit women under 45.
- LNV foods contributed only about 5 to 6% of energy to older men and women in Nunavik.

Protein

- In most communities, the mean protein intake was more than double the RNI.
- Protein provided from 18% to 25% of energy for all groups surveyed.
- In all communities, country food provided 40% to 60% of protein.

Fat

- The mean fat intake of Inuit women ranged from 61 grams in Repulse Bay (1992) to 103 grams in Gjoa Haven.
- The mean fat intake of First Nations women was 153

grams in Davis Inlet – almost twice as high as in Fort Severn.

- Inuit women obtained from 28% to 37% of energy from fat and 9% to 12% from saturated fat. Fat and saturated fat intakes exceeded recommendations except in Nain and Repulse Bay (1992 only).⁹
- For First Nations women, fat provided 41% and 33% of energy, respectively, in Davis Inlet and Fort Severn. Saturated fat provided 12.5% of energy in Davis Inlet and 12.1% in Fort Severn.
- In Nunavik, fat was a more important source of energy among Inuit men and women aged 45 to 74 than among those under 45.
- In the communities surveyed, Nutritious Perishable Foods provided an average of 16 to 32 grams of fat in the diet of women under 45, except in Davis Inlet, where these foods provided an average of 83 grams of fat.
- Among the older Inuit of Nunavik, country food provided an average of 33 grams of fat for women and 46 grams of fat for men – just over 40% of their total intake of fat.
- LNV foods provided about one quarter of total fat intake in Repulse Bay and Gjoa Haven and from 10%

⁹ Health Canada recommends that Canadian adults should derive no more than 30% of energy from fat, and no more than 10% of energy from saturated fat.

to 19% of fat in the diet of young Inuit women elsewhere.

Carbohydrate

- Except in Davis Inlet, young women obtained from 39% to 50% of energy from carbohydrate. The percentage was much lower in Davis Inlet (36%) than in Fort Severn (44%).
- In Nunavik, carbohydrate provided only about a third of energy for older adults, compared to 41% for young men and 43% for young women.
- In most Inuit communities, women under 45 obtained about 40% of carbohydrate from sugar and sweets. However, approximately half the carbohydrate in Repulse Bay in 1992 and in Coral Harbour came from these foods.
- In Nunavik, younger adults obtained about one third of their carbohydrate from sugar and sweets, compared to 24% for older women and 29% for older men.

Alcohol

- Since alcohol is prohibited or controlled in many of the communities surveyed, alcohol consumption may have been under-reported. However, the alcohol reported among men under 45 in Nunavik accounted

for 5% of their energy intake.

Fibre

- Except in Davis Inlet, mean intakes of fibre were between 5 and 10 grams per day, which is considered low, although there is no RNI for fibre in Canada.
- In most communities, Nutritious Perishable Foods and Non-perishable Foods provided similar amounts of fibre. Non-perishables, however, provided significantly more fibre in Pond Inlet in 1993, and Nutritious Perishables significantly more fibre in Pond Inlet in 1997 and in Fort Severn.

Vitamins and minerals

- Mean intakes of thiamin, riboflavin, niacin and vitamin B₁₂ exceeded requirements.
- Mean intakes of most minerals, except calcium, exceeded requirements.
- In most communities, country food provided over 40% of iron, zinc, phosphorus, riboflavin and niacin, at least a third of thiamin and vitamin B₆ and over 80% of vitamin B₁₂.

Vitamin A

- Mean vitamin A intake was below the RNI except in

- Davis Inlet and among women under 45 in Nunavik. The mean intake of vitamin A was only 26% of the RNI in Repulse Bay in 1992, and 49% of the RNI in Nain.
- Country food (principally muktuk) provided significant amounts of vitamin A (>190 RE) for women in Pond Inlet, Arctic Bay, Gjoa Haven and Nunavik. The largest amounts of vitamin A obtained from country food were in Nunavik. Differences among Inuit communities may reflect differences in the timing of the surveys.
- Nutritious Perishable Foods (vegetables, pizza and dairy products) were also an important source of vitamin A, with average amounts ranging from 121 RE in Repulse Bay (1992) to 1117 RE in Davis Inlet, which had large amounts coming from margarine and carrots.
- The mean intake of vitamin A in Repulse Bay increased significantly between 1992 and 1997.

Vitamin C

- In all communities except Gjoa Haven, mean vitamin C intake did not meet recommendations for women under 45, and was only about 28 to 29% of the RDA for Inuit men and women 45 to 74 in Nunavik, using the RDA for smokers.
- In many communities, over half the vitamin C intake

came from Non-perishables (primarily fruit drink crystals with vitamin C added).

Folate

- Mean folate intakes were only 22 to 45% of recommended levels for all groups except women in Davis Inlet where it reached 56% of the RDA.
- Mean folate intake was very low among Inuit women in Repulse Bay (22% and 26% of the RDA in 1992 and 1997, respectively) and much less than recommended (39 to 44% of the RDA) among Inuit women and men in Nunavik and among Inuit women in other communities (31 to 38%).
- Mean folate intake was significantly higher in Pond Inlet than in Repulse Bay in 1992 and in 1997.
- Nutritious Perishables were a significant source of folate for young women in all communities. The mean amounts ranged from 27 mcg in Repulse Bay (1992) to 65 mcg in Arctic Bay.
- Mean amounts of folate obtained from Nutritious Perishables in Davis Inlet and Fort Severn reached 91 and 78 mcg, respectively.
- In Nunavik, Inuit under 45 obtained significantly more folate from Nutritious Perishable Foods than those aged 45 to 74.
- Miscellaneous Non-perishable Foods (mainly tea) also provided significant amounts of folate, especially

in Davis Inlet and Fort Severn and among older people in Nunavik.

Vitamin B₆

- Mean intakes of vitamin B₆ were less than recommended in Pond Inlet in 1993, in Repulse Bay in 1992 and 1997, for young women in Nunavik, and for both women and men 45 and over in Nunavik (69% and 86% of the RDA, respectively).

Calcium

- Mean calcium intakes were less than half the RDA for young Inuit women in most communities and only half of recommended levels in Arctic Bay and Coral Harbour, and among young men in Nunavik. Mean intakes were higher in Davis Inlet and Fort Severn.
- Except in Gjoa Haven, Inuit women under 45 obtained an average of only 39% to 54% of the recommended intake of calcium.
- Among Inuit aged 45 to 74 in Nunavik, the mean calcium intake was only 28% of the RDA for women, and 36% of the RDA for men.
- In Inuit communities, the amount of calcium obtained from perishable dairy products ranged from a mean of 45 mg in Repulse Bay (1992) to 141 mg in Coral Harbour.

- Fort Severn was exceptional, with a mean intake of 285 mg of calcium from perishable dairy products and 238 mg from non-perishable dairy products.
- Between 1992 and 1997, Nutritious Perishables (mainly pizza) became a more important source of calcium in Repulse Bay.
- The amount of calcium from sweets (fruit drink crystals and chocolate bars) was also significant, reaching as high as 204 mg in Gjoa Haven.
- Miscellaneous Non-perishable Foods (baking powder, macaroni and cheese dinners) and miscellaneous Perishable Foods (frozen pizza) provided significant amounts of calcium in most communities.
- Miscellaneous Non-perishable Foods (mainly baking powder in bannock) were a far more important source of calcium among older men and women in Nunavik than dairy products.

Magnesium

- Mean intakes of magnesium were less than recommended in all communities except Davis Inlet, and were only about 60% of the RDA in Repulse Bay in 1997 and among all four age/sex groups in Nunavik in 1992.

Cholesterol and caffeine

- For Inuit women under 45, mean cholesterol intakes ranged from 291 mg in Repulse Bay to 418 mg in Pond Inlet (1992).
- Cholesterol intake was exceptionally high in Davis Inlet (a mean of 847 mg, twice as high as in Fort Severn).
- Caffeine intake was above the recommended limit (300 mg) in Repulse Bay (1992), Pond Inlet (1993) and Coral Harbour.

Change in food consumption and nutrient intakes in Repulse Bay and Pond Inlet between 1992 and 1997

- With the exception of vitamin A in Repulse Bay, there was no major improvement in nutrient intakes in these communities.
- In both communities, there was a significant decline in the consumption of Non-perishable Foods, an increase in the consumption of miscellaneous Perishable Foods, such as pizza, and no change in the consumption of Foods of Little Nutritional Value.

Convenience Perishable Foods

- The high-fat Convenience Perishable Foods that were eliminated from the Food Mail Program in 1996

appear to be a more important part of the diet in Nunavut and in Nain than in Nunavik, Davis Inlet or Fort Severn.¹⁰

- Even in Nunavut, these foods provided less than 10% of energy, fat and saturated fat, and their contribution in most cases was about 5%.

Body Mass Index (BMI)

- The BMI was calculated for non-pregnant women in the INAC surveys. While the BMI was developed as a measure of assessing the weight and health risk for non-Aboriginal populations and may not be as appropriate for populations of a different morphology, it is generally used in most nutrition and health studies.
- In the INAC surveys, the prevalence of overweight and obesity was much higher than in the Canadian

population. The percentage of overweight women (BMI >27) was exceptionally high in Repulse Bay in 1997 (48%), Gjoa Haven (50%), Davis Inlet (75%) and Fort Severn (67%).¹¹ The prevalence of obesity (BMI >30) was also very high (29% to 50%) in the same communities.

- In Nunavik, 21% of Inuit were overweight (but not obese) and 19% obese. Obesity was more prevalent among women than men in all age groups. By comparison, in 1992, 15% of adults in Quebec were overweight (but not obese) and 13% obese.¹²

¹⁰ In this document, Convenience Perishable Foods are defined as fresh or frozen products consisting of meat, poultry, fish, vegetables or eggs which are breaded or battered or in pastry, and combinations containing any of the above products, with the exception of fish sticks and fish cakes. The most important food in this category is fried chicken. Sandwiches, hamburgers, hot dogs, prepared salads and other foods prepared for immediate consumption, that are subject to the Goods and Services Tax, have been treated as Foods of Little Nutritional Value under the Food Mail Program since 1991 and are classified in the latter category.

¹¹ Based on the 1996-1997 National Population Health Survey, 16% of women aged 15 to 44 in Canada, excluding the territories, had a BMI of 27.0 or more (C. Pérez, Health Statistics Division, Statistics Canada, personal communication).

¹² Hélène Delisle, Lynne Mongeau and Marc Goneau, "Eating Habits, Physical Activity and Obesity," in *A Health Profile of the Inuit: Report of the Santé Québec Health Survey Among the Inuit of Nunavik, 1992, Volume 1: Health Determining Factors*, ed. Mireille Jetté (Montréal: ministère de la Santé et des Services sociaux, gouvernement du Québec, 1994), p. 167.

Conclusion

Based on these surveys, there appears to be a number of differences among these communities in terms of food consumption, nutrient intakes and weight status. The common pattern, however, is a diet with a much lower consumption of fruits, vegetables and dairy products than is recommended for Canadians, a high consumption of sugar and sweets, intakes of fat and saturated fat that are above recommended levels and intakes of calcium, magnesium, folate, vitamin C and vitamin A that are lower than recommended. Overweight also appears to be a significant and increasing risk to health in these communities. On the other hand, mean intakes of protein, iron, zinc, phosphorus, thiamin, riboflavin, niacin and vitamin B₁₂ appear to be more than adequate. Country food continues to be a very important source of some essential nutrients in these communities.

The survey results also revealed large differences between the diets of the older and younger generation of men and women in Nunavik. While older people had more protein and iron in their diet because of their higher consumption of country food, and appeared to be eating much less "junk food" than the younger generation, their mean intake of vitamin C and folate fell further below recommended levels than was the case among those under 45, who were consuming more fruit, vegetables

and dairy products.

From these surveys, it is not possible to determine the extent to which the high cost of nutritious food is contributing to the nutrition problems evident from the 24-hour diet recalls summarized in this document. There was some evidence, however, that folate intake was related to socio-economic status in Pond Inlet in 1997.¹³ Also, in Pond Inlet, where fruits and vegetables were less expensive than in Repulse Bay, women had a higher folate intake from these foods. Evidence from other studies indicates that price is perceived as a barrier to consumption of fruit and vegetables in the North.¹⁴

These results provide as accurate a picture of nutrient intakes in these communities during the survey periods as it is possible to obtain from the data derived from a single 24-hour recall for each respondent. Nevertheless, it is important to bear in mind that the results for a specific community – or for the entire region, in the case of Nunavik – may have been different in other seasons,

¹³ Lawn and Harvey, p. 90.

¹⁴ Sandy Burnham, *Influences on Fruit and Vegetable Consumption in Alaska: Focus Group Summary Document* (Anchorage: Department of Health and Social Services, State of Alaska, 1996); Delisle, Mongeau and Goneau, pp. 161-162.

or even for another one- to two-week period in the same season, since the foods available in these communities can vary from one week to the next, depending upon weather conditions and other factors. Food choices can also be affected by changes in the availability of specific country foods, a death in the community, or unusual circumstances such as the incident that occurred in Pond Inlet during the survey period in 1997, when teenagers were stranded on an iceflow.

The accuracy of the results also depends upon the willingness and ability of respondents to recall and report complete and accurate details of everything they ate and drank during a 24-hour period. The biases and limitations of this type of survey instrument have been assessed in the other populations, but these may differ in Aboriginal communities. The severe climate and language differences add to the difficulties of conducting such surveys in these communities. In any nutrition survey, errors can also be introduced during the data entry process and in the analysis, and can remain undetected. Compared to national or provincial surveys, the potential impact of errors in the nutrient data base, of the choice of default recipes used when respondents do not provide recipes for the foods they consumed, and of any inconsistencies in the classification of foods is much greater in a survey in an isolated community, where the diet, especially during a brief survey period, has much

less variety than in the south.

In these surveys, foods also had to be classified according to the categories used for administration of the Food Mail Program. Staff turnover between years increased the probability of errors and inconsistencies in coding foods according to this unique system.

While the broad picture of nutrition in isolated Inuit and First Nation communities summarized here generally agrees with the findings of other researchers in the field, some of the findings are surprising. For example, there was a significant drop in the mean energy and caffeine intake, as well as in mean sugar consumption, reported in Repulse Bay between 1992 and 1997. This difference may be due to under-reporting of coffee and sugar in 1997. Furthermore, the mean energy intake in this community in 1997 is not consistent with the apparent increases in BMI.

It is also surprising that there was very little consumption of prepared frozen foods, such as pizza, reported in the Nunavik survey. Santé Québec's use of the previous calendar day as the period of recall, rather than the previous 24 hours, as in the INAC surveys, may have contributed to under-reporting of these foods in Nunavik. Respondents in Nunavik may also have been less willing to report consumption of foods perceived to be less

"healthy" to the nurse conducting the interview, than to the local interviewers who conducted the INAC surveys elsewhere. The apparent differences between the nutrient intakes and food consumption patterns of Inuit women in Nunavik, Nunavut and Labrador, based on these surveys, therefore, may partly reflect the different survey methodologies.

Changes made to the Food Mail Program since 1991 have significantly affected the shipments of nutritious perishable foods to isolated communities in parts of Northern Canada, although the program's impact on nutrient intakes of women of childbearing age has not yet been clearly demonstrated. The significance of these survey results for the management of food security and nutrition issues in isolated communities, as well as actions that will be taken, based in part on the results of these surveys, will be discussed elsewhere.¹⁵

¹⁵ Working title of paper in preparation is *Food Cost and Nutrition Issues in Isolated Northern Communities: Past, Present and an Action Plan for the Future* (Ottawa: Indian and Northern Affairs Canada, forthcoming.)

Tables

LNV Foods of Little Nutritional Value
NE Niacin Equivalents
PUFA Polyunsaturated fatty acids
RDA Recommended Dietary Allowance
RE Retinol Equivalents
RNI Recommended Nutrient Intake

g gram(s)
mcg microgram(s)
mg milligram(s)

Table 1. Mean energy and macronutrient intake and percent RNI

Year	n	Calories	Carbohydrate	Protein	Fat	Saturated Fat	PUFA	Fibre
			g	g	g	g	g	g
Inuit women 15 to 44								
Pond Inlet	116	2180	221	134	83	25.5	10.7	7.3
% RNI		115		263				
Pond Inlet	123	2125	261	106	72	21.6	11.6	7.9
% RNI		112		208				
Pond Inlet	136	2037	199	118	83	25.5	10.8	7.2
% RNI		107		237				
Arctic Bay	74	2199	236	122	84	26.6	12.1	8.2
% RNI		116		239				
Repulse Bay	62	1972	246	106	61	22.6	8.3	5.6
% RNI		104		208				
Repulse Bay	71	1696	190	83	66	19.8	9.8	6.0
% RNI		89		163				
Coral Harbour	78	2286	267	113	86	30.0	11.1	8.2
% RNI		120		221				
Gjoa Haven	121	2763	340	121	103	30.4	15.2	9.5
% RNI		145		238				
Nain	114	2021	230	119	65	20.8	9.7	6.7
% RNI		106		233				
First Nations women 15 to 44								
Davis Inlet	57	3375	301	192	153	46.8	19.6	11.8
% RNI		178		377				
Fort Severn	48	2094	233	114	78	28.2	11.4	7.8
% RNI		110		223				
Inuit of Nunavik								
Women 18 to 44	156	1869	201	89	76	22.6	10.1	7.4
% RNI		98		175				
Men 18 to 44	134	2310	236	107	95	29.5	12.7	7.6
% RNI		86		167				
Women 45 to 74	78	1681	148	88	79	22.0	9.4	5.3
% RNI		93		163				
Men 45 to 74	57	2413	207	137	108	29.7	12.8	6.6
% RNI		105		217				

Table 2. Percent of calories from carbohydrate, protein, total fat, saturated fat and alcohol

Community	Year	Carbohydrate %	Protein %	Fat %	Saturated Fat %	Alcohol %
Inuit women 15 to 44						
Pond Inlet	1992	41	25	34	10.5	-
Pond Inlet	1993	49	20	31	9.1	-
Pond Inlet	1997	39	23	37	11.3	1
Arctic Bay	1993	43	22	35	10.9	-
Repulse Bay	1992	50	22	28	10.3	-
Repulse Bay	1997	45	20	35	10.5	-
Coral Harbour	1993	47	20	34	11.8	-
Gjoa Haven	1993	49	18	34	9.9	-
Nain	1992	46	24	29	9.3	1
First Nations women 15 to 44						
Davis Inlet	1992	36	23	41	12.5	-
Fort Severn	1992	44	22	33	12.1	-
Inuit of Nunavik						
Women 18 to 44	1992	43	19	37	10.9	1
Men 18 to 44	1992	41	19	37	11.5	5
Women 45 to 74	1992	35	21	42	11.8	1
Men 45 to 74	1992	34	23	40	11.1	2

Table 3. Mean vitamin intake and percent RDA/RNI

	Year	n	Vitamin A RE	Vitamin C* mg	Thiamin mg	Riboflavin mg	Niacin NE	Vitamin B6 mg	Folate mcg	Vitamin B12 mcg
Inuit women 15 to 44										
Pond Inlet	1992	116	697	85	1.45	2.48	50.8	1.40	127	14.5
% RDA/RNI			87	78	132	226	363	108	32	606
Pond Inlet	1993	123	504	59	1.42	2.43	44.0	1.22	135	12.8
% RDA/RNI			63	53	129	221	314	94	34	533
Pond Inlet	1997	136	659	63	1.31	2.14	47.4	1.42	123	12.9
% RDA/RNI			82	57	120	194	339	109	31	536
Arctic Bay	1993	74	646	67	1.45	2.29	49.9	1.52	154	13.7
% RDA/RNI			81	61	132	209	356	117	38	571
Repulse Bay	1992	62	208	51	1.21	2.09	43.1	1.02	90	10.9
% RDA/RNI			26	46	110	190	308	78	22	456
Repulse Bay	1997	71	441	74	1.15	1.71	38.3	1.19	104	10.3
% RDA/RNI			55	67	104	155	274	92	26	430
Coral Harbour	1993	78	507	77	1.56	2.12	47.1	1.42	124	12.7
% RDA/RNI			63	70	142	193	337	109	31	529
Gjoa Haven	1993	121	617	163	1.80	2.62	51.5	1.65	150	15.6
% RDA/RNI			77	148	164	238	368	127	37	648
Nain	1992	114	390	94	1.39	2.33	43.1	1.44	147	13.1
% RDA/RNI			49	86	127	212	308	111	37	546
First Nations women 15 to 44										
Davis Inlet	1992	57	1324	79	2.32	4.15	72.5	2.20	223	21.4
% RDA/RNI			165	71	211	378	518	169	56	893
Fort Severn	1992	48	601	78	1.23	2.47	32.3	2.57	180	6.1
% RDA/RNI			75	71	112	224	231	198	45	254
Inuit of Nunavik										
Women 18 to 44	1992	156	796	68	1.28	1.74	38.8	1.21	157	12.6
% RDA/RNI			100	62	116	158	277	93	39	523
Men 18 to 44	1992	134	778	71	1.58	2.12	45.6	1.51	176	13.4
% RDA/RNI			78	56	131	163	285	116	44	557
Women 45 to 74	1992	78	588	29	1.17	1.62	37.4	1.03	122	13.5
% RDA/RNI			73	27	106	148	267	69	30	562
Men 45 to 74	1992	57	736	35	1.90	2.55	56.1	1.47	163	16.6
% RDA/RNI			74	28	158	197	351	86	41	691

RDA is used for all vitamins for which Dietary Reference Intakes have been established. RNI is used for vitamin A.

* RDA includes additional requirement of 35 mg vitamin C for smokers.

	Vitamin A RE	Vitamin C* mg	Thiamin mg	Riboflavin mg	Niacin NE	Vitamin B6 mg	Folate mcg	Vitamin B12 mcg
RDA/RNI								
Women 18 to 44	800	110	1.10	1.10	14.0	1.30	400	2.4
Men 18 to 44	1000	125	1.20	1.30	16.0	1.30	400	2.4
Women 45 to 74	800	110	1.10	1.10	14.0	1.50	400	2.4
Men 45 to 74	1000	125	1.20	1.30	16.0	1.70	400	2.4

Table 4. Mean intake of selected micronutrients and percent RDA/RNI

	n	Calcium mg	Iron mg	Zinc mg	Magnesium mg	Phosphorus mg	Potassium mg	Sodium mg	Cholesterol mg	Caffeine mg
Inuit women 15 to 44										
Pond Inlet 1992	116	479	27.7	16.9	230	1385	2098	2522	418	325
% RDA/RNI		48	213	188	74	198				
Pond Inlet 1993	123	471	28.1	15.1	225	1231	2128	2318	310	416
% RDA/RNI		47	216	168	73	176				
Pond Inlet 1997	136	402	22.3	14.4	211	1271	2042	2432	356	281
% RDA/RNI		40	172	160	68	182				
Arctic Bay 1993	74	517	23.2	13.6	231	1405	2202	2272	388	284
% RDA/RNI		52	179	152	75	201				
Repulse Bay 1992	62	382	23.6	16.3	243	1148	2025	2341	291	769
% RDA/RNI		38	181	181	78	164				
Repulse Bay 1997	71	404	12.9	9.8	180	1041	1952	2093	291	242
% RDA/RNI		40	99	109	58	149				
Coral Harbour 1993	78	539	20.2	13.1	259	1379	2510	2515	331	614
% RDA/RNI		54	156	145	84	197				
Gjoa Haven 1993	121	767	18.8	14.0	260	1592	2903	3057	389	331
% RDA/RNI		77	144	155	84	227				
Nain 1992	114	402	23.1	15.2	226	1323	2203	2796	374	264
% RDA/RNI		40	177	169	73	189				
First Nations women 15 to 44										
Davis Inlet 1992	57	628	30.7	26.1	313	1967	3392	4391	847	212
% RDA/RNI		63	236	290	101	281				
Fort Severn 1992	48	777	21.8	13.9	266	1566	3027	2512	422	331
% RDA/RNI		78	168	155	86	224				
Inuit of Nunavik 1992										
Women 18 to 44	156	393	15.9	8.9	196	1097	2114	2117	321	300
% RDA/RNI		39	123	99	63	157				
Men 18 to 44	134	536	17.8	11.3	238	1338	2537	2608	391	317
% RDA/RNI		54	197	94	60	191				
Women 45 to 74	78	334	17.4	10.2	170	1026	1631	1697	294	286
% RDA/RNI		28	217	113	53	147				
Men 45 to 74	57	430	26.3	11.3	231	1587	2205	2883	400	339
% RDA/RNI		36	292	94	55	227				

RDA is used for all minerals for which Dietary Reference Intakes have been established. RNI is used for iron and zinc.

RDA/RNI
 Women 18 to 44
 Men 18 to 44
 F over 45
 M over 45

Calcium	Iron	Zinc	Magnesium	Phosphorus
mg	mg	mg	mg	mg
1000	13	9	310	700
1000	9	12	400	700
1200	8	9	320	700
1200	9	12	420	700

Table 5. Mean energy and nutrient intake by Food Mail category: Inuit and First Nations women 15 to 44

Energy and Nutrients/ Food Mail Category	Pond Inlet 1992	Pond Inlet 1993	Pond Inlet 1997	Arctic Bay 1993	Repulse Bay 1992	Repulse Bay 1997	Coral Harbour 1993	Gjoa Haven 1993	Nain 1992	Davis Inlet 1992	Fort Severn 1992
Energy (Calories)											
Nutritious Perishable	505	326	523	599	355	426	589	528	519	1310	665
Non-perishable	649	865	449	625	819	491	650	974	597	1148	702
LNV	353	451	391	419	426	439	543	706	412	313	257
Country	588	411	534	435	352	264	419	462	396	564	448
Convenience Perishable	86	71	139	121	20	77	86	93	97	40	23
Total	2180	2125	2037	2199	1972	1696	2286	2763	2021	3375	2094
Carbohydrate (g)											
Nutritious Perishable	43	30	50	42	26	34	47	47	47	75	68
Non-perishable	114	150	78	108	151	84	116	175	109	178	120
LNV	62	78	67	80	69	70	102	115	70	47	43
Country	-	-	-	-	-	-	-	-	-	-	-
Convenience Perishable	2	3	4	5	1	2	3	4	5	1	1
Total	221	261	199	236	246	190	267	340	230	301	233
Protein (g)											
Nutritious Perishable	28	17	25	36	20	24	29	25	26	64	33
Non-perishable	14	18	12	15	16	12	15	20	15	28	19
LNV	3	4	4	3	6	5	4	7	4	4	4
Country	80	61	65	58	63	35	56	62	67	92	56
Convenience Perishable	9	6	12	10	2	7	8	8	7	4	2
Total	134	106	118	122	106	83	113	121	119	192	114
Fat (g)											
Nutritious Perishable	24	16	25	32	19	21	32	27	25	83	29
Non-perishable	16	22	10	15	17	12	15	22	11	36	17
LNV	11	14	11	10	15	15	14	25	11	13	8
Country	27	17	28	21	9	13	20	25	12	19	23
Convenience Perishable	5	4	8	6	1	4	5	5	5	2	1
Total	83	72	83	84	61	66	86	103	65	153	78

	Pond Inlet 1992	Pond Inlet 1993	Pond Inlet 1997	Arctic Bay 1993	Repulse Bay 1992	Repulse Bay 1997	Coral Harbour 1993	Gjoa Haven 1993	Nain 1992	Davis Inlet 1992	Fort Severn 1992
Saturated Fat (g)											
Nutritious Perishable	9.5	6.5	10.0	12.5	7.3	8.5	12.7	10.4	9.0	24.6	11.6
Non-perishable	5.6	6.6	3.3	5.0	6.2	4.3	5.7	8.4	4.2	14.3	7.6
LNV	3.5	3.9	4.0	3.2	6.5	3.7	6.0	6.5	2.8	2.7	2.1
Country	5.4	3.5	5.9	4.0	2.2	2.0	4.3	3.7	3.2	4.5	6.5
Convenience Perishable	1.5	1.1	2.4	1.8	0.4	1.2	1.4	1.5	1.5	0.7	0.4
Total	25.5	21.6	25.5	26.6	22.6	19.8	30.0	30.4	20.8	46.8	28.2
Polyunsaturated Fat (g)											
Nutritious Perishable	2.7	1.7	2.8	3.2	2.5	2.5	3.7	3.1	3.0	9.5	4.0
Non-perishable	2.4	3.9	1.9	2.8	2.4	1.8	2.1	3.2	1.4	4.0	1.9
LNV	2.7	3.8	2.3	2.6	2.0	3.4	2.5	6.0	2.4	3.4	1.7
Country	1.9	1.3	2.2	2.0	1.3	1.2	2.0	2.0	1.7	2.2	3.5
Convenience Perishable	0.9	0.8	1.7	1.5	0.2	0.9	0.9	1.1	1.2	0.5	0.2
Total	10.7	11.6	10.8	12.1	8.3	9.8	11.1	15.2	9.7	19.6	11.4
Cholesterol (mg)											
Nutritious Perishable	127	74	94	158	75	123	112	124	135	430	188
Non-perishable	22	25	18	27	34	21	26	33	18	64	41
LNV	6	12	14	11	13	13	7	13	12	7	11
Country	235	179	192	162	163	112	160	196	185	334	176
Convenience Perishable	28	19	38	31	5	21	26	24	24	13	6
Total	418	310	356	388	291	291	331	389	374	847	422
Fibre (g)											
Nutritious Perishable	3.2	2.0	3.7	3.4	1.7	2.0	3.1	3.1	2.6	4.9	4.1
Non-perishable	3.0	4.3	2.3	3.4	2.9	2.4	3.8	3.8	2.8	5.4	2.8
LNV	1.0	1.4	1.0	1.0	1.0	1.5	1.2	2.3	1.1	1.4	0.9
Country	-	-	-	-	-	-	-	-	-	-	-
Convenience Perishable	0.1	0.2	0.2	0.4	-	0.1	0.1	0.2	0.3	-	-
Total	7.3	7.9	7.2	8.2	5.6	6.0	8.2	9.5	6.7	11.8	7.8

	Pond Inlet 1992	Pond Inlet 1993	Pond Inlet 1997	Arctic Bay 1993	Repulse Bay 1992	Repulse Bay 1997	Coral Harbour 1993	Gjoa Haven 1993	Nain 1992	Davis Inlet 1992	Fort Severn 1992
Calcium (mg)											
Nutritious Perishable	185	163	197	232	100	177	232	240	133	248	369
Non-perishable	201	206	106	175	173	133	187	374	174	266	341
LNV	52	64	59	71	83	68	91	103	58	45	45
Country	33	32	31	28	25	20	22	43	29	67	19
Convenience Perishable	7	7	11	11	2	6	6	7	7	3	3
Total	479	471	402	517	382	404	539	767	402	628	777
Iron (mg)											
Nutritious Perishable	3.0	1.9	3.1	3.8	2.1	2.4	3.0	3.1	3.2	6.8	3.4
Non-perishable	4.1	5.9	3.2	4.1	4.3	3.5	4.5	5.2	4.3	7.0	4.3
LNV	0.9	1.3	1.1	1.1	1.4	1.3	1.3	1.9	1.0	0.9	0.8
Country	19.2	18.7	14.4	13.6	15.7	5.3	11.1	8.1	14.1	15.7	13.2
Convenience Perishable	0.5	0.4	0.7	0.6	0.1	0.4	0.4	0.5	0.5	0.2	0.1
Total	27.7	28.1	22.3	23.2	23.6	12.9	20.2	18.8	23.1	30.7	21.8
Zinc (mg)											
Nutritious Perishable	3.8	2.2	3.3	4.8	2.9	2.7	3.6	3.1	3.3	8.5	3.9
Non-perishable	1.9	3.3	2.5	1.8	1.9	1.5	2.0	2.8	1.8	3.6	2.5
LNV	0.5	0.7	0.6	0.6	1.0	0.9	0.8	1.2	0.5	0.7	0.5
Country	10.0	8.5	7.2	5.8	10.3	4.3	6.1	6.3	9.1	13.0	6.9
Convenience Perishable	0.7	0.4	0.8	0.6	0.2	0.5	0.5	0.5	0.6	0.4	0.1
Total	16.9	15.1	14.4	13.6	16.3	9.8	13.1	14.0	15.2	26.1	13.9
Magnesium (mg)											
Nutritious Perishable	54	36	56	62	43	43	61	46	51	99	90
Non-perishable	77	96	62	77	115	60	103	90	73	97	103
LNV	23	30	23	26	25	32	31	52	26	28	20
Country	61	54	48	42	56	28	41	49	67	86	52
Convenience Perishable	8	7	12	13	2	7	8	8	8	3	2
Total	224	223	202	220	240	170	245	246	225	313	266

	Pond Inlet 1992	Pond Inlet 1993	Pond Inlet 1997	Arctic Bay 1993	Repulse Bay 1992	Repulse Bay 1997	Coral Harbour 1993	Gloa Haven 1993	Nain 1992	Davis Inlet 1992	Fort Severn 1992
Phosphorus (mg)											
Nutritious Perishable	330	234	329	419	236	302	391	355	317	682	514
Non-perishable	228	278	164	252	230	212	244	347	229	369	388
LNV	107	145	122	142	168	159	178	232	125	104	96
Country	657	523	565	505	502	317	508	600	595	785	556
Convenience Perishable	63	50	91	87	12	50	60	58	57	27	12
Total	1385	1231	1271	1405	1148	1041	1379	1592	1323	1967	1566
Potassium (mg)											
Nutritious Perishable	672	417	678	747	420	479	691	565	723	1225	1137
Non-perishable	742	871	599	679	1011	570	1024	833	804	975	1056
LNV	255	369	248	253	294	453	323	684	281	373	199
Country	352	398	394	405	283	384	396	735	296	784	620
Convenience Perishable	77	72	123	119	17	66	76	87	98	34	15
Total	2098	2128	2042	2202	2025	1952	2510	2903	2203	3392	3027
Sodium (mg)											
Nutritious Perishable	488	424	678	706	379	620	693	760	772	1704	758
Non-perishable	1568	1315	1174	1007	1452	904	1309	1585	1482	2133	1431
LNV	198	314	244	242	366	377	284	461	237	303	180
Country	140	144	136	114	121	75	110	124	141	194	108
Convenience Perishable	128	121	201	203	24	116	119	126	164	57	34
Total	2522	2318	2432	2272	2341	2093	2515	3057	2796	4391	2512
Vitamin A (RE)											
Nutritious Perishable	273	158	280	347	121	206	251	286	205	1117	417
Non-perishable	144	84	105	74	48	91	87	106	125	184	150
LNV	11	20	15	21	14	17	16	20	20	9	15
Country	261	233	242	191	15	106	143	192	32	9	15
Convenience Perishable	8	9	16	14	11	21	9	13	7	4	3
Total	697	504	659	646	208	441	507	617	390	1324	601

	Pond Inlet 1992	Pond Inlet 1993	Pond Inlet 1997	Arctic Bay 1993	Repulse Bay 1992	Repulse Bay 1997	Coral Harbour 1993	Gjos Haven 1993	Nain 1992	Davis Inlet 1992	Fort Severn 1992
Vitamin C (mg)											
Nutritious Perishable	26	15	30	37	8	10	16	15	29	24	30
Non-perishable	48	31	23	21	32	46	51	123	50	37	41
LNV	7	11	7	7	6	16	7	22	9	13	6
Country	4	2	3	2	6	1	3	2	5	5	1
Convenience Perishable	-	-	-	1	-	-	-	1	1	-	-
Total	85	59	63	67	51	74	77	163	94	79	78
Thiamin (mg)											
Nutritious Perishable	0.41	0.20	0.37	0.50	0.23	0.30	0.56	0.39	0.45	0.80	0.46
Non-perishable	0.39	0.60	0.31	0.37	0.43	0.34	0.43	0.59	0.40	0.66	0.42
LNV	0.05	0.07	0.09	0.06	0.10	0.10	0.07	0.12	0.06	0.10	0.05
Country	0.57	0.51	0.51	0.46	0.45	0.38	0.47	0.68	0.45	0.75	0.28
Convenience Perishable	0.03	0.03	0.04	0.04	0.01	0.03	0.03	0.03	0.03	0.01	0.01
Total	1.45	1.42	1.31	1.45	1.21	1.15	1.56	1.80	1.39	2.32	1.23
Riboflavin (mg)											
Nutritious Perishable	0.47	0.32	0.44	0.64	0.30	0.41	0.52	0.54	0.43	1.02	0.76
Non-perishable	0.48	0.57	0.31	0.48	0.43	0.33	0.38	0.62	0.47	0.77	0.75
LNV	0.06	0.09	0.08	0.08	0.12	0.09	0.10	0.14	0.08	0.07	0.06
Country	1.42	1.42	1.24	1.03	1.24	0.83	1.07	1.27	1.29	2.26	0.88
Convenience Perishable	0.06	0.04	0.08	0.06	0.02	0.05	0.05	0.05	0.06	0.03	0.01
Total	2.48	2.43	2.14	2.29	2.09	1.71	2.12	2.62	2.33	4.15	2.47
Niacin (NE)											
Nutritious Perishable	11.2	6.4	10.1	13.8	8.0	9.9	11.4	9.5	10.7	22.2	12.6
Non-perishable	7.4	9.4	6.4	7.4	9.6	7.0	9.0	8.2	6.9	12.2	8.0
LNV	1.2	2.2	1.6	1.5	2.6	3.0	1.8	3.9	1.9	2.3	1.7
Country	28.3	23.8	25.6	23.7	22.5	16.2	22.1	27.1	21.2	35.0	9.5
Convenience Perishable	2.6	2.2	3.8	3.6	0.5	2.2	2.9	2.8	2.4	0.9	0.6
Total	50.8	44.0	47.4	49.9	43.1	38.3	47.1	51.5	43.1	72.5	32.3

	Pond Inlet 1992	Pond Inlet 1993	Pond Inlet 1997	Arctic Bay 1993	Repulse Bay 1992	Repulse Bay 1997	Coral Harbour 1993	Gjoa Haven 1993	Nain 1992	Davis Inlet 1992	Fort Severn 1992
Vitamin B6 (mg)											
Nutritious Perishable	0.46	0.27	0.42	0.57	0.32	0.37	0.51	0.40	0.49	0.97	0.67
Non-perishable	0.20	0.19	0.20	0.22	0.18	0.18	0.22	0.24	0.22	0.31	0.26
LNV	0.09	0.13	0.09	0.09	0.08	0.12	0.09	0.21	0.09	0.12	0.08
Country	0.54	0.52	0.52	0.48	0.43	0.42	0.49	0.68	0.54	0.74	1.53
Convenience Perishable	0.12	0.10	0.18	0.16	0.02	0.10	0.12	0.12	0.11	0.05	0.02
Total	1.40	1.22	1.42	1.52	1.02	1.19	1.42	1.65	1.44	2.20	2.57
Folate (mcg)											
Nutritious Perishable	55	35	61	65	27	39	54	47	59	91	78
Non-perishable	46	66	35	58	37	33	42	53	61	100	86
LNV	12	21	13	14	15	20	15	32	15	18	9
Country	11	9	11	12	10	9	11	15	9	13	6
Convenience Perishable	2	2	3	4	1	2	2	3	3	1	1
Total	127	135	123	154	90	104	124	150	147	223	180
Vitamin B12 (mcg)											
Nutritious Perishable	1.3	0.8	1.2	1.9	1.1	1.1	1.4	1.2	1.7	2.9	1.8
Non-perishable	0.4	0.6	0.5	0.4	0.3	0.4	0.4	0.4	0.3	0.9	0.4
LNV	0.0	0.1	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.1	0.0
Country	12.7	11.2	10.9	11.1	9.2	8.6	10.7	13.7	10.9	17.5	3.8
Convenience Perishable	0.1	0.1	0.2	0.2	-	0.1	0.1	0.1	0.1	-	-
Total	14.5	12.8	12.9	13.7	10.9	10.3	12.7	15.6	13.1	21.4	6.1
Caffeine (mg)											
Non-perishable	307	394	252	251	751	221	587	294	232	197	324
LNV	17	22	29	33	18	21	27	37	32	15	8
Total	325	416	281	284	769	242	614	331	264	212	331

Table 6. Mean energy and nutrient intake by Food Mail category: Inuit of Nunavik, 1992

Energy and Nutrients/ Food Mail Category	Women 18 to 44	Men 18 to 44	Women 45 to 74	Men 45 to 74
Energy (Calories)				
Nutritious Perishable	566	741	227	334
Non-perishable	557	671	763	1135
LNV	309	420	94	131
Country	409	426	559	807
Convenience Perishable	29	51	38	6
Total	1869	2310	1681	2413
Carbohydrate (g)				
Nutritious Perishable	50	55	18	22
Non-perishable	94	115	112	165
LNV	55	63	16	20
Country	1	-	1	-
Convenience Perishable	1	2	1	-
Total	201	236	148	207
Protein (g)				
Nutritious Perishable	30	40	12	21
Non-perishable	10	13	12	21
LNV	2	3	1	1
Country	45	47	60	93
Convenience Perishable	3	4	4	1
Total	89	107	88	137
Fat (g)				
Nutritious Perishable	27	40	12	18
Non-perishable	16	18	29	42
LNV	8	9	2	1
Country	23	25	33	46
Convenience Perishable	2	3	2	-
Total	76	95	79	108

	Women 18 to 44	Men 18 to 44	Women 45 to 74	Men 45 to 74
Saturated Fat (g)				
Nutritious Perishable	10.6	15.7	4.8	6.7
Non-perishable	6.0	6.8	10.9	15.3
LNV	1.9	2.6	0.5	0.5
Country	3.6	3.7	5.3	7.0
Convenience Perishable	0.5	0.7	0.6	0.1
Total	22.6	29.5	22.0	29.7
Polyunsaturated Fat (g)				
Nutritious Perishable	3.4	4.8	1.3	2.1
Non-perishable	2.3	2.5	4.1	5.8
LNV	1.9	1.9	0.4	0.3
Country	2.1	2.9	3.2	4.5
Convenience Perishable	0.3	0.5	0.4	-
Total	10.1	12.7	9.4	12.8
Cholesterol (mg)				
Nutritious Perishable	164	212	84	117
Non-perishable	18	21	31	49
LNV	6	6	1	1
Country	124	137	167	231
Convenience Perishable	9	15	12	2
Total	321	391	294	400
Fibre (g)				
Nutritious Perishable	3.3	3.1	1.6	1.5
Non-perishable	2.9	3.5	3.3	5.0
LNV	0.9	0.8	0.2	0.1
Country	0.2	0.1	0.2	0.1
Convenience Perishable	0.1	0.1	-	-
Total	7.4	7.6	5.3	6.6

	Women 18 to 44	Men 18 to 44	Women 45 to 74	Men 45 to 74
Calcium (mg)				
Nutritious Perishable	184	295	61	74
Non-perishable	133	156	215	267
LNV	44	52	14	15
Country	30	28	41	74
Convenience Perishable	3	5	3	-
Total	393	536	334	430
Iron (mg)				
Nutritious Perishable	3.2	3.8	1.3	1.8
Non-perishable	3.7	4.3	4.5	6.5
LNV	0.7	0.8	0.2	0.2
Country	8.2	8.6	11.2	17.7
Convenience Perishable	0.2	0.3	0.2	-
Total	15.9	17.8	17.4	26.3
Zinc (mg)				
Nutritious Perishable	3.4	4.5	1.5	2.3
Non-perishable	1.3	1.5	1.3	2.1
LNV	0.4	0.5	0.1	0.1
Country	3.6	4.4	7.1	6.7
Convenience Perishable	0.2	0.3	0.2	-
Total	8.9	11.3	10.2	11.3
Magnesium (mg)				
Nutritious Perishable	55	74	25	31
Non-perishable	70	79	74	98
LNV	21	30	6	11
Country	33	35	46	67
Convenience Perishable	3	5	3	1
Total	182	222	152	208

	Women 18 to 44	Men 18 to 44	Women 45 to 74	Men 45 to 74
Phosphorus (mg)				
Nutritious Perishable	353	508	147	227
Non-perishable	179	209	231	352
LNV	98	121	28	37
Country	446	466	595	965
Convenience Perishable	20	34	25	6
Total	1097	1338	1026	1587
Potassium (mg)				
Nutritious Perishable	757	914	313	427
Non-perishable	698	791	686	916
LNV	229	268	52	71
Country	403	516	550	785
Convenience Perishable	26	47	30	6
Total	2114	2537	1631	2205
Sodium (mg)				
Nutritious Perishable	623	824	176	514
Non-perishable	1176	1408	1297	2135
LNV	161	186	48	37
Country	113	103	127	188
Convenience Perishable	44	87	48	9
Total	2117	2608	1697	2883
Vitamin A (RE)				
Nutritious Perishable	345	406	193	273
Non-perishable	75	99	37	37
LNV	8	12	1	2
Country	361	257	353	425
Convenience Perishable	7	4	4	-
Total	796	778	588	736

	Women 18 to 44	Men 18 to 44	Women 45 to 74	Men 45 to 74
Vitamin C (mg)				
Nutritious Perishable				
Non-perishable	32	24	15	10
LNV	24	36	9	20
Country	8	7	1	1
Convenience Perishable	4	3	4	4
Total	-	-	-	-
	68	71	29	35
Thiamin (mg)				
Nutritious Perishable				
Non-perishable	0.46	0.62	0.23	0.39
LNV	0.34	0.45	0.38	0.72
Country	0.04	0.06	0.01	0.01
Convenience Perishable	0.43	0.43	0.53	0.77
Total	0.01	0.02	0.01	-
	1.28	1.58	1.17	1.90
Riboflavin (mg)				
Nutritious Perishable				
Non-perishable	0.52	0.72	0.22	0.32
LNV	0.36	0.42	0.47	0.62
Country	0.05	0.10	0.02	0.04
Convenience Perishable	0.79	0.85	0.89	1.57
Total	0.02	0.03	0.02	-
	1.74	2.12	1.62	2.55
Niacin (NE)				
Nutritious Perishable				
Non-perishable	11.7	15.4	4.7	8.4
LNV	5.6	6.9	6.7	10.6
Country	1.2	2.1	0.5	0.6
Convenience Perishable	19.2	19.6	24.1	36.2
Total	1.1	1.7	1.4	0.3
	38.8	45.6	37.4	56.1

	Women 18 to 44	Men 18 to 44	Women 45 to 74	Men 45 to 74
Vitamin B6 (mg)				
Nutritious Perishable	0.51	0.61	0.22	0.37
Non-perishable	0.15	0.20	0.10	0.19
LNV	0.07	0.15	0.03	0.06
Country	0.43	0.48	0.62	0.83
Convenience Perishable	0.04	0.07	0.05	0.01
Total	1.21	1.51	1.03	1.47
Folate (mcg)				
Nutritious Perishable	64	68	24	31
Non-perishable	61	68	76	103
LNV	10	21	4	7
Country	21	17	17	22
Convenience Perishable	1	2	1	-
Total	157	176	122	163
Vitamin B12 (mcg)				
Nutritious Perishable	1.2	1.7	0.6	0.9
Non-perishable	0.2	0.2	0.1	0.7
LNV	-	0.1	-	-
Country	11.1	11.3	12.7	15.0
Convenience Perishable	-	0.1	-	-
Total	12.6	13.4	13.5	16.6
Caffeine (mg)				
Non-perishable	278	292	284	326
LNV	23	25	3	13
Total	300	317	286	339

Table 7. Mean energy intake (Calories per day) from food groups and Food Mail categories: Inuit and First Nations women 15 to 44

Food group/Food Mail category		Pond Inlet 1992	Pond Inlet 1993	Pond Inlet 1997	Arctic Bay 1993	Repulse Bay 1992	Repulse Bay 1997	Coral Harbour 1993	Gjoa Haven 1993	Nain 1992	Davis Inlet 1992	Fort Severn 1992
Dairy Products	Nutritious Perishable Non-perishable	57 22	48 14	52 7	50 23	38 9	44 12	90 26	81 47	33 46	52 40	143 123
Eggs	Nutritious Perishable	20	11	12	24	7	21	10	22	22	95	37
Meat, Poultry, Fish	Nutritious Perishable	174	78	130	253	145	124	211	140	194	485	146
	Convenience Perishable	79	46	130	87	13	65	69	74	72	40	18
	Non-perishable	4	22	13	7	19	20	13	22	7	102	21
	Country	584	401	518	432	352	219	391	462	394	564	448
Alternates	Nutritious Perishable	17	10	6	7	31	-	12	2	-	5	13
	Non-perishable	1	2	-	-	-	1	3	4	3	9	-
Cereal Products	Nutritious Perishable	72	42	76	51	53	46	92	103	101	232	133
	Non-perishable	215	376	152	260	257	162	201	389	293	423	239
Fruits, vegetables	Nutritious Perishable	85	45	107	81	41	41	72	57	115	119	119
	Non-perishable	28	20	32	32	10	23	59	28	41	37	31
Fat, Oils	Nutritious Perishable	21	19	27	13	21	18	34	37	36	296	44
	Non-perishable	84	129	43	69	87	49	59	110	29	196	42
	Country	4	10	16	2	-	45	28	-	2	-	-
Sugar, Sweets	Non-perishable	175	176	93	112	280	108	171	228	114	240	145
Miscellaneous	Nutritious Perishable	59	74	114	119	28	131	67	85	17	25	30
	Convenience Perishable	7	25	9	35	7	12	16	20	25	-	5
	Non-perishable	121	126	109	119	149	117	118	146	63	101	102
Foods of Little Nutritional Value	Cereal Products	353	451	391	419	426	439	543	706	412	313	257
	Potato chips	38	47	37	47	28	35	45	73	55	11	51
	Sweets	80	121	68	76	49	150	76	224	87	128	55
	Miscellaneous	214	256	237	276	273	206	398	376	219	143	122
	Alcohol	18	25	32	20	75	47	24	26	23	31	29
		3	3	18	-	-	-	-	8	28	-	-
Total (all sources)		2180	2125	2037	2199	1972	1696	2286	2763	2021	3375	2094

Table 8. Mean energy intake (Calories per day) from food groups and Food Mail categories: Inuit of Nunavik, 1992

Food group/Food Mail category		Women 18 to 44		Men 18 to 44		Women 45 to 74		Men 45 to 74	
Dairy Products	Nutritious Perishable	52	104	15	16				
	Non-perishable	10	8	20	10				
Eggs	Nutritious Perishable	32	35	18	21				
	Nutritious Perishable								
Meat, Poultry, Fish	Nutritious Perishable	185	267	92	164				
	Convenience Perishable	23	42	38	6				
	Non-perishable	8	12	3	58				
	Country	370	354	517	748				
Alternates	Nutritious Perishable	3	9	-	1				
	Non-perishable	-	2	-	2				
Cereal Products	Nutritious Perishable	118	157	44	56				
	Non-perishable	223	282	364	494				
Fruits, vegetables	Nutritious Perishable	104	92	34	42				
	Non-perishable	27	39	16	23				
	Country	3	1	3	1				
Fat, Oils	Nutritious Perishable	52	76	24	34				
	Non-perishable	115	119	235	315				
	Country	36	71	39	58				
Sugar, Sweets	Non-perishable	120	142	94	182				
	Nutritious Perishable								
Miscellaneous	Nutritious Perishable	20	-	-	-				
	Convenience Perishable	7	9	-	-				
	Non-perishable	54	67	31	51				
Foods of Little Nutritional Value									
Cereal Products		309	420	94	131				
		32	34	13	10				
Potato chips		75	70	13	9				
Sweets		174	195	47	55				
Miscellaneous		7	11	4	3				
Alcohol		20	109	17	54				
Total (all sources)		1869	2310	1681	2413				

Table 9. Mean fat intake (grams per day) from major sources: Inuit and First Nations women 15 to 44

Food group/ Food Mail category	Pond Inlet 1992	Pond Inlet 1993	Pond Inlet 1997	Arctic Bay 1993	Repulse Bay 1992	Repulse Bay 1997	Coral Harbour 1993	Gloa Haven 1993	Nain 1992	Davis Inlet 1992	Fort Severn 1992
Dairy Products	4	3	3	4	3	3	7	8	5	6	14
Meat, Poultry, Fish											
Nutritious Perishable	11	5	9	18	9	8	16	10	13	34	10
Convenience Perishable	4	2	8	5	1	4	4	4	4	2	1
Non-perishable	-	2	1	-	2	2	1	2	1	8	1
Country	27	16	27	21	9	8	17	25	12	19	23
Fat, Oils											
Nutritious Perishable	2	2	3	1	2	2	4	4	4	33	5
Non-perishable	9	14	5	8	10	5	7	12	3	22	5
Country	-	1	2	-	-	5	3	-	-	-	-
Miscellaneous											
Nutritious Perishable	3	3	6	5	1	6	3	3	1	1	2
Non-perishable	3	2	2	2	3	3	3	3	2	2	2
Foods of Little Nutritional Value											
Potato chips	11	14	11	10	15	15	14	25	11	13	8
Sweets	5	8	4	5	3	10	5	15	6	8	4
	3	3	3	3	6	2	6	6	2	2	1
Total (all sources)	83	72	83	84	61	66	86	103	65	153	78

Table 10. Mean fat intake (grams per day) from major sources: Inuit of Nunavik, 1992

Food group/Food Mail category	Women 18 to 44	Men 18 to 44	Women 45 to 74	Men 45 to 74
Dairy Products	3	6	2	1
Meat, Poultry, Fish				
Nutritious Perishable	12	18	7	11
Convenience Perishable	1	2	2	-
Non-perishable	1	1	-	4
Country	19	17	29	39
Fat, Oils				
Nutritious Perishable	6	8	3	4
Non-perishable	13	13	26	35
Country	4	8	4	6
Miscellaneous				
Nutritious Perishable	1	-	-	-
Non-perishable	1	1	-	1
Foods of Little Nutritional Value				
Potato chips	8	9	2	1
Sweets	5	5	1	1
	1	2	-	-
Total (all sources)	76	95	79	108

Table 11. Mean saturated fat intake (grams per day) from major sources: Inuit and First Nations women 15 to 44

Food group/ Food Mail category	Pond Inlet 1992	Pond Inlet 1993	Pond Inlet 1997	Arctic Bay 1993	Repulse Bay 1992	Repulse Bay 1997	Coral Harbour 1993	Gjoa Haven 1993	Nain 1992	Davis Inlet 1992	Fort Severn 1992
Dairy Products	2.6	2.0	1.9	2.8	1.8	1.9	4.2	4.7	3.0	3.5	8.6
Meat, Poultry, Fish											
Nutritious Perishable	4.1	2.0	3.2	6.7	3.4	2.8	5.7	3.8	4.6	12.2	3.3
Convenience Perishable	1.3	0.7	2.3	1.3	0.2	1.1	1.1	1.2	1.2	0.7	0.3
Non-perishable	0.1	0.6	0.2	0.1	0.6	0.6	0.4	0.7	0.2	2.9	0.5
Country	5.3	3.5	5.4	4.0	2.2	2.0	3.6	3.7	3.2	4.5	6.5
Fat, Oils											
Nutritious Perishable	1.0	1.0	1.1	0.5	0.9	0.8	1.6	0.9	1.1	6.7	1.7
Non-perishable	3.4	4.1	1.6	2.6	3.9	2.0	2.5	4.6	1.3	8.7	1.7
Country	0.1	-	0.5	0.1	-	-	0.7	-	-	-	-
Miscellaneous											
Nutritious Perishable	1.2	1.3	2.2	2.0	0.5	2.4	1.1	1.4	0.3	0.3	0.5
Non-perishable	0.9	0.9	0.8	0.9	1.0	1.0	1.3	1.2	0.6	0.7	0.7
Foods of Little Nutritional Value											
Potato chips	3.5	3.9	4.0	3.2	6.5	3.7	6.0	6.5	2.8	2.7	2.1
Sweets	0.9	1.3	0.8	0.8	0.4	1.2	0.7	2.1	0.7	1.2	0.4
	1.9	1.8	2.1	1.6	4.3	1.5	4.1	3.2	0.9	0.9	0.6
Total (all sources)	25.5	21.6	25.5	26.6	22.6	19.8	30.0	30.4	20.8	46.8	28.2

Table 12. Mean saturated fat intake (grams per day) from major sources: Inuit of Nunavik, 1992

Food group/Food Mail category	Women 18 to 44	Men 18 to 44	Women 45 to 74	Men 45 to 74
Dairy Products	2.1	4.0	1.1	0.7
Meat, Poultry, Fish				
Nutritious Perishable	4.4	6.3	2.4	3.8
Convenience Perishable	0.3	0.6	0.6	0.1
Non-perishable	0.2	0.4	-	1.5
Country	3.5	3.3	5.2	6.8
Fat, Oils				
Nutritious Perishable	2.4	3.6	1.4	1.9
Non-perishable	4.8	5.1	9.7	13.0
Country	0.1	0.5	0.1	0.2
Miscellaneous				
Nutritious Perishable	0.4	-	-	-
Non-perishable	0.4	0.4	0.1	0.2
Foods of Little Nutritional Value				
Potato chips	1.9	2.6	0.5	0.5
Sweets	0.7	0.7	0.1	0.1
Sweets	0.6	1.2	0.1	0.2
Total (all sources)	22.6	29.5	22.0	29.7

Table 13. Mean carbohydrate intake (grams per day) from major sources: Inuit and First Nations women 15 to 44

Food group/ Food Mail category	Pond Inlet 1992	Pond Inlet 1993	Pond Inlet 1997	Arctic Bay 1993	Repulse Bay 1992	Repulse Bay 1997	Coral Harbour 1993	Gloa Haven 1993	Nain 1992	Davis Inlet 1992	Fort Severn 1992
Dairy Products	6	5	5	4	4	5	8	9	5	6	22
Cereal Products											
Nutritious Perishable	13	8	14	9	10	9	17	19	19	43	25
Non-perishable	44	78	30	52	52	33	41	83	57	88	49
Fruits, vegetables											
Nutritious Perishable	18	10	20	17	8	8	16	12	24	26	27
Non-perishable	6	4	7	6	2	5	14	6	10	9	7
Sugar and Sweets											
Non-perishable	44	45	24	29	72	28	43	58	29	62	37
LNV - sweets	47	58	52	64	54	47	85	82	51	30	29
Miscellaneous											
Nutritious Perishable	6	8	10	13	3	13	7	9	2	1	3
Non-perishable	18	21	17	19	24	17	17	23	9	15	17
Total (all sources)	221	261	199	236	246	190	267	340	230	301	233

Table 14. Mean carbohydrate intake (grams per day) from major sources: Inuit of Nunavik, 1992

Food group/Food Mail category	Women 18 to 44	Men 18 to 44	Women 45 to 74	Men 45 to 74
Dairy Products	4	7	3	2
Cereal Products				
Nutritious Perishable	22	29	8	10
Non-perishable	46	58	76	100
Fruits, vegetables				
Nutritious Perishable	22	18	8	10
Non-perishable	6	9	4	6
Sugar and Sweets				
Non-perishable	31	36	24	47
LNV - sweets	42	45	12	13
Miscellaneous				
Nutritious Perishable	2	-	-	-
Non-perishable	10	11	7	11
Total (all sources)	201	236	148	207

Table 15. Mean vitamin A intake (RE per day) from major sources: Inuit and First Nations women 15 to 44

Food group/ Food Mail category	Pond Inlet 1992	Pond Inlet 1993	Pond Inlet 1997	Arctic Bay 1993	Repulse Bay 1992	Repulse Bay 1997	Coral Harbour 1993	Gjoa Haven 1993	Nain 1992	Davis Inlet 1992	Fort Severn 1992
Dairy Products											
Nutritious Perishable	39	33	33	43	25	28	64	64	27	42	101
Non-perishable	9	5	3	9	4	5	10	18	18	17	50
Eggs	26	14	15	30	9	26	12	27	27	120	46
Vegetables											
Perishable	153	63	159	211	43	88	123	113	86	489	178
Non-perishable	37	24	13	12	-	3	19	24	13	18	36
Fat, Oils											
Nutritious Perishable	23	21	22	13	16	12	24	50	34	436	45
Miscellaneous											
Nutritious Perishable	18	19	34	34	17	38	21	24	18	2	26
Non-perishable	79	40	66	26	38	77	43	57	72	125	53
Country Food	261	223	242	191	15	106	143	192	32	9	15
Total (all sources)	697	504	659	646	208	441	507	617	390	1324	601

Table 16. Mean vitamin A intake (RE per day) from major sources: Inuit of Nunavik, 1992

Food group/Food Mail category	Women 18 to 44	Men 18 to 44	Women 45 to 74	Men 45 to 74
Dairy Products				
Nutritious Perishable	45	94	14	14
Non-perishable	4	3	8	4
Eggs	40	45	23	27
Vegetables				
Perishable	179	176	119	182
Non-perishable	20	36	16	9
Fat, Oils				
Nutritious Perishable	55	72	27	39
Miscellaneous				
Nutritious Perishable	6	-	-	-
Non-perishable	41	47	7	16
Country Food	361	257	353	425
Total (all sources)	796	778	588	736

Table 17. Mean folate intake (mcg per day) from major sources: Inuit and First Nations women 15 to 44

Food group/Food Mail category	Pond Inlet 1992	Pond Inlet 1993	Pond Inlet 1997	Arctic Bay 1993	Repulse Bay 1992	Repulse Bay 1997	Coral Harbour 1993	Gjoa Haven 1993	Nain 1992	Davis Inlet 1992	Fort Severn 1992
Dairy Products											
Nutritious Perishable	3	3	3	2	1	2	5	3	1	2	12
Non-perishable	1	1	-	1	-	1	2	3	3	2	7
Cereal Products											
Nutritious Perishable	9	5	10	6	7	6	11	12	12	28	17
Non-perishable	10	17	8	12	11	9	10	14	13	22	10
Fruits, vegetables											
Nutritious Perishable	25	11	29	30	7	7	17	12	32	23	32
Non-perishable	7	8	8	10	2	6	15	4	7	11	10
Citrus, Tomatoes											
Nutritious Perishable	15	3	11	20	1	1	2	1	21	6	18
Non-perishable	3	4	5	3	-	2	1	1	4	7	3
Other Fruit											
Nutritious Perishable	2	2	3	1	2	1	5	2	-	1	4
Non-perishable	-	-	-	-	-	-	-	-	-	1	-
Potatoes											
Nutritious Perishable	3	1	4	2	2	2	2	2	7	8	7
Non-perishable	-	-	1	1	1	-	1	1	-	-	1
Other Vegetables											
Nutritious Perishable	5	5	10	6	3	2	8	7	4	9	3
Non-perishable	4	4	2	6	1	4	12	3	2	3	6
Miscellaneous											
Nutritious Perishable	6	9	12	14	3	17	10	10	2	1	3
Non-perishable	27	42	18	34	23	15	14	30	37	59	58
Foods of Little Nutritional Value											
Potato chips	12	21	13	14	15	20	15	32	15	18	9
Miscellaneous	9	13	7	8	4	13	8	22	7	12	5
Alcohol	1	2	2	1	6	4	1	2	1	3	2
	-	-	-	-	-	-	-	-	2	-	-
Country Food											
	11	9	11	12	10	9	11	15	9	13	6
Total (all sources)	127	135	123	154	90	104	124	150	147	223	180

Table 18. Mean folate intake (mcg per day) from major sources: Inuit of Nunavik, 1992

Food group/ Food Mail category		Women 18 to 44		Men 18 to 44		Women 45 to 74		Men 45 to 74	
Dairy Products	Nutritious Perishable	4	7	1	2	1	1	1	2
	Non-perishable	1	-	-	1	1	1	1	1
Cereal Products	Nutritious Perishable	15	21	5	7	5	5	7	7
	Non-perishable	12	14	17	23	17	17	23	23
Fruits, vegetables	Perishable	31	25	11	13	11	11	13	13
	Non-perishable	6	10	3	6	3	3	6	6
	Country	1	-	1	1	1	1	1	1
Citrus, Tomatoes	Nutritious Perishable	17	13	6	3	6	6	3	3
	Non-perishable	2	5	1	4	1	1	4	4
Other Fruit	Nutritious Perishable	1	1	-	1	-	-	1	1
	Non-perishable	-	-	-	-	-	-	-	-
Potatoes	Nutritious Perishable	5	5	2	2	2	2	2	2
	Non-perishable	1	1	-	-	-	-	-	-
Other Vegetables	Nutritious Perishable	8	7	3	7	3	3	7	7
	Non-perishable	3	4	2	2	2	2	2	2
Miscellaneous	Nutritious Perishable	2	-	-	-	-	-	-	-
	Non-perishable	42	43	54	71	54	54	71	71
Foods of Little Nutritional Value		10	21	4	7	4	4	7	7
	Potato chips	7	7	1	1	1	1	1	1
	Miscellaneous	-	1	-	-	-	-	-	-
	Alcohol	1	10	2	5	2	2	5	5
Country Food		21	17	17	22	17	17	22	22
Total (all sources)		157	176	122	163	122	122	163	163

Table 19. Mean calcium intake (mg per day) from major sources: Inuit and First Nations women 15 to 44

Food group/ Food Mail category	Pond Inlet 1992	Pond Inlet 1993	Pond Inlet 1997	Arctic Bay 1993	Repulse Bay 1992	Repulse Bay 1997	Coral Harbour 1993	Gjoa Haven 1993	Nain 1992	Davis Inlet 1992	Fort Severn 1992
Dairy Products											
Nutritious Perishable	85	83	79	98	45	62	141	119	60	94	285
Non-perishable	41	27	14	45	17	23	50	89	88	79	238
Sweets											
Non-perishable	50	24	11	17	34	25	34	137	27	20	14
Miscellaneous											
Nutritious Perishable	44	52	66	82	16	78	39	66	9	5	10
Non-perishable	89	121	61	69	108	64	79	115	29	126	54
Foods of Little Nutritional Value											
Sweets	52	64	59	71	83	68	91	103	58	45	45
Miscellaneous	38	44	38	53	52	35	74	77	37	24	30
	6	8	12	7	26	19	7	7	7	12	5
Country Food	33	32	31	28	25	20	22	43	29	67	19
Total (all sources)	479	471	402	517	382	404	539	767	402	628	777

Table 20. Mean calcium intake (mg per day) from major sources: Inuit of Nunavik, 1992

Food group/Food Mail category	Women 18 to 44	Men 18 to 44	Women 45 to 74	Men 45 to 74
Dairy Products				
Nutritious Perishable	97	211	30	31
Non-perishable	18	16	38	20
Sweets				
Non-perishable	14	15	5	5
Miscellaneous				
Nutritious Perishable	15	-	-	-
Non-perishable	78	97	145	202
Foods of Little Nutritional Value				
Sweets	44	52	14	15
Miscellaneous	32	33	10	6
Alcohol	2	3	-	1
	1	9	2	6
Country Food	30	28	41	74
Total (all sources)	393	536	334	430

Table 21. Mean iron intake (mg per day) from major sources: Inuit and First Nations women 15 to 44

Food group/ Food Mail category	Pond Inlet 1992	Pond Inlet 1993	Pond Inlet 1997	Arctic Bay 1993	Repulse Bay 1992	Repulse Bay 1997	Coral Harbour 1993	Gjoa Haven 1993	Nain 1992	Davis Inlet 1992	Fort Severn 1992
Eggs	0.2	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.2	0.9	0.3
Meat, Poultry, Fish											
Nutritious Perishable	1.1	0.5	0.8	1.4	1.0	0.7	1.0	0.7	1.4	2.8	0.8
Convenience Perishable	0.4	0.2	0.6	0.4	0.1	0.3	0.4	0.4	0.4	0.2	0.1
Non-perishable	-	0.2	0.2	0.1	-	0.1	-	0.1	-	0.5	0.1
Country	19.2	18.7	14.3	13.5	15.7	5.2	11.0	8.1	14.1	15.7	13.2
Cereal Products											
Nutritious Perishable	0.7	0.4	0.7	0.4	0.5	0.4	0.8	1.0	1.0	2.2	1.3
Non-perishable	2.3	3.6	1.5	2.4	2.1	1.8	2.0	3.0	2.7	4.5	2.4
Fruits, vegetables											
Nutritious Perishable	0.5	0.3	0.7	0.5	0.3	0.3	0.5	0.4	0.5	0.6	0.6
Non-perishable	0.2	0.2	0.2	0.2	0.1	0.2	0.5	0.2	0.4	0.4	0.3
Miscellaneous											
Nutritious Perishable	0.4	0.6	0.7	1.2	0.2	0.8	0.5	0.8	0.1	0.2	0.2
Non-perishable	1.4	1.6	1.2	1.3	1.9	1.3	1.7	1.7	0.9	0.2	1.2
Foods of Little Nutritional Value	0.9	1.3	1.1	1.1	1.4	1.3	1.3	1.9	1.0	0.9	0.8
Total (all sources)	27.7	28.1	22.3	23.2	23.6	12.9	20.2	18.8	23.1	30.7	21.8

Table 22. Mean iron intake (mg per day) from major sources: Inuit of Nunavik, 1992

Food group/Food Mail category	Women 18 to 44	Men 18 to 44	Women 45 to 74	Men 45 to 74
Eggs	0.3	0.3	0.2	0.2
Meat, Poultry, Fish				
Nutritious Perishable	1.0	1.3	0.4	0.8
Convenience Perishable	0.1	0.2	0.2	-
Non-perishable	0.1	0.1	-	0.4
Country	8.2	8.5	11.2	17.6
Cereal Products				
Nutritious Perishable	1.1	1.5	0.4	0.5
Non-perishable	2.5	2.8	3.7	4.9
Fruits, vegetables				
Nutritious Perishable	0.5	0.5	0.2	0.2
Non-perishable	0.2	0.3	0.1	0.2
Miscellaneous				
Nutritious Perishable	0.2	-	-	-
Non-perishable	0.7	0.9	0.6	0.9
Foods of Little Nutritional Value	0.7	0.8	0.2	0.2
Total (all sources)	15.9	17.8	17.4	26.3

Table 23. Body Mass Index (BMI) of Inuit and First Nations women aged 15 to 44

Community	Year	n*	Mean BMI**	BMI categories**			
				<20.0 %	24.0 - 24.9 %	25.0 - 27.0 %	>27.0 %
Inuit							
Pond Inlet	1992	96	24.7	8	48	26	18
Pond Inlet	1993	94	24.7	7	57	15	20
Pond Inlet	1997	98	25.3	2	46	20	32
Pond Inlet	1993	72	25.3	4	53	18	25
Arctic Bay	1992	54	27.0	9	35	19	37
Repulse Bay	1997	56	28.5	2	30	20	48
Repulse Bay	1993	75	26.3	4	45	19	32
Coral Harbour	1993	98	28.4	1	21	28	50
Gjoa Haven	1992	92	24.6	9	63	4	24
Nain							
							11
							15
							12
							11
							26
							38
							21
							29
							15
First Nations							
Davis Inlet	1992	36	30.5	0	11	14	75
Fort Severn	1992	42	29.5	2	21	10	67
							50
							43

* Excluding pregnant women and women not reporting height and weight.

** BMI = weight (kg)/height (m²)

Appendix A. Classification of foods reported in the 24-hour recall according to food groups and Food Mail categories

Food groups	Nutritious Perishable Foods	Non-perishable Foods	Foods of Little Nutritional Value	Country Foods	Convenience Perishable Foods
Dairy Products	Cheese, natural Processed cheese slices Processed cheese spread Cottage cheese Cream cheese dip Fluid milk (including chocolate) Ice cream/ice cream bars/ice cream sandwiches Milk shakes Powdered skim/whole milk Yogurt Yogurt beverages	Evaporated milk			
Eggs	Eggs				
Meat, Poultry, and Fish	Fresh and frozen meat, poultry, fish (excluding Convenience Perishable Foods) Luncheon meat Frozen fish sticks Frozen fish cakes Frozen beef patties Wieners	Canned meat, poultry, fish, and luncheon meat		Country meat, birds, fish (fresh/aged/dried) Caribou bone marrow Muktuk Liver Shellfish	Frozen fried breaded chicken Frozen fish in batter

**Meat
Alternates**

Bacon bits, meatless
Nuts
Peanut butter
Seeds

Dried peas and bean
Canned dried peas and
beans

**Cereal
Products**

Breads
Rolls, plain
Cook-type breakfast
cereals (e.g., rolled oats)
English muffins
Bagels

Bread and roll mix
Bread stuffing mix
Cake, cookie, muffin,
pancake mixes
Cereals, ready-to-eat
Cookies, plain (arrowroot,
social tea)
Cornstarch
Crackers
Pilot biscuits
Flour
Ice cream cones (cone only)
Pasta, dry (macaroni,
spaghetti, noodles)
Rice pilaf mix, dry
Rice, white, with pasta
and seasonings
Rice, regular/instant

Cookies, sweet
Danish pastry/
turnovers/Pop Tarts
Doughnuts
Cakes, frozen/fresh
Waffles, frozen
Granola bars
Pies/tarts
Banana bread
Muffins
Frozen French
toast

**Citrus and
Tomatoes**

Fruit juice (apple with
vitamin C, orange), fresh
or frozen
Citrus fruit (oranges,
grapefruit, lemons)
Tomatoes

Fruit juice (apple with vitamin
C, orange), canned or bottled
Spaghetti sauce (tomato),
canned
Tomato juice, canned
Tomato paste/sauce, canned
Tomatoes, canned

Other Fruit

Fruit, fresh or frozen
Fruit juice, frozen, no
vitamin C (e.g., grape)

Blueberries

Food groups	Nutritious Perishable Foods	Non-perishable Foods	Foods of Little Nutritional Value	Country Foods	Convenience Perishable Foods
Potatoes	Potatoes, fresh Potatoes, French-fried/ hash brown, frozen	Potatoes, canned Potatoes, instant mashed flakes, dry	Potato chips		
Other Vegetables	Vegetables, fresh or frozen	Vegetables, canned Vegetables, dehydrated (onion flakes)			
Fats and Oils	Butter Margarine Salad dressing Mayonnaise	Lard Shortening Vegetable oil		Country fat	
Sugar and Sweets		Baking chocolate Chocolate-flavoured beverage mix (Quik) Cocoa powder Dessert topping, powdered Equal (low-calorie sweetener) Fruit drink crystals with Vitamin C added Fruit drinks (with vitamin C or 25% juice), canned/bottled/ frozen Gelatin dessert powder Jams and preserves Molasses Pudding mixes Sauces, sundae Sugar/syrups	Candy Chewing gum Chocolate bars Coffee whitener (non-dairy), powdered/frozen Fruit drink crystals, without vitamin C Instant tea, frozen Popcorn, caramel- coated Fruit-flavoured ices (e.g., Popsicles/ Slush Puppies) Frozen cheesecake Soft drinks		

Food groups	Nutritious Perishable Foods	Non-perishable Foods	Foods of Little Nutritional Value	Country Foods	Convenience Perishable Foods
Miscellaneous	Frozen sweet and sour pork Pizza/Pizza Pops Rice fried with meat, frozen TV Dinners (e.g., Salisbury steak, turkey, roast chicken) Bottled mineral water Sandwich spread	Baking powder/soda Breading for baked or fried chicken Canned beef/chicken stew Canned meatballs Chow mein, canned Coffee, regular/decaffeinated Corned beef hash, canned Dried herbs and spices Gravies Macaroni and cheese dinner (e.g., Kraft Dinner) Pickles and olives Pasta with sauce, canned Sauces (e.g., ketchup, Worcestershire, soy, barbecue, sweet and sour) Sauces, dehydrated Soups, canned Soups, dehydrated Spaghetti sauce (with meat) Tea, regular/instant/herb Dried fruit and nut mix Vinegar Water Yeast, Baker's, dry	Cheese straws Popcorn, popped Sandwiches and burgers, ready-to-eat Tortilla chips		Breaded fried onion rings, frozen Corn dogs, frozen Fish and chips, frozen Fried chicken dinners, frozen Pies (meat, chicken/turkey), frozen
Alcohol			Liquor Wine Beer Home brew		